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August 2, 1999

Magalie R. Salas, Esquire
Secretary
Federal Communications Commission
Room TW-B204
445 12th Street, S.W.
Washington, DC 20554

Re: MM Docket No. 99-25; RM-9208; RM-9242
Creation of a Low Power Radio Service

Dear Ms. Salas:

Transmitted herewith on behalf of Salem Communications Corporation are an original and four copies of its comments in response to the *Notice of Proposed Rulemaking*, MM Docket No. 99-25, 14 FCC Rcd 2471 (1999), in the above-referenced rulemaking proceeding.

Should any questions arise concerning this matter, please communicate directly with this office.

Very truly yours,
FLETCHER, HEALD & HILDRETH, P.L.C.

Andrew S. Kersting
Counsel for Salem Communications Corporation

Enclosure
cc (w/ encl.): Certificate of Service (by hand)

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	MM Docket No. 99-25
	)	
Creation of a Low	)	RM-9208
Power Radio Service	)	RM-9242
	)	

To: The Commission

COMMENTS OF SALEM COMMUNICATIONS CORPORATION

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SUMMARY

The proposed LPFM service would not serve the public interest. As demonstrated by the engineering analysis contained herein, the proposed LPFM service would cause substantial interference to existing full power FM stations, such that it potentially could result in the loss of existing FM service to tens of millions of Americans. Moreover, the FCC's proposal to establish an LPFM service fails to recognize that the FM band is already overly congested, and is inconsistent with the Commission's proposals in its *Technical Streamlining* rulemaking proceeding, which commenced just last year. The institution of an LPFM service also would significantly hinder the development of in-band-on-channel digital transmission services.

Moreover, the proposed LPFM service would not achieve the FCC's intended objectives of providing an increased opportunity for new entry into the broadcasting industry, enhanced ownership diversity, or an increase in local programming. The proposed LPFM service also would result in a proliferation of unauthorized broadcast operations.

Nevertheless, assuming, *arguendo*, the Commission elects to establish an LPFM service, in order to minimize the interference to full power stations, the Commission must maintain the second and third-adjacent channel protection standards. Indeed, the Commission's proposal to authorize an LPFM service without regard to the second and third-adjacent channel protection requirements is inconsistent with the Commission's action and proposal in two other rulemaking proceedings, and, if adopted, would constitute arbitrary and capricious agency action. In addition, LPFM stations should be authorized to operate only with a horizontally polarized antenna. The Commission also should impose maximum height and power combination restrictions, apply increased distance

separation requirements to all LPFM stations, limit the amount of interference that LPFM stations may receive, and impose a mandatory local program origination requirement on all LPFM stations.

In the event the FCC elects to establish a commercial LPFM service, the Commission must resolve all mutually exclusive applications for LPFM stations through a competitive bidding process. Furthermore, the Commission's proposed ownership restrictions are inconsistent with the Telecommunications Act of 1996, and, if adopted, will not survive judicial scrutiny.

For the reasons stated above, as well as the many others discussed herein, the FCC's proposal to establish an LPFM service should not be adopted.

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	MM Docket No. 99-25
	)	
Creation of a Low	)	RM-9208
Power Radio Service	)	RM-9242
	)	

To: The Commission

COMMENTS OF SALEM COMMUNICATIONS CORPORATION

Salem Communications Corporation ("Salem")[1] hereby submits these comments in response to the Commission's *Notice of Proposed Rule Making*, MM Docket No. 99-25, 14 FCC Rcd 2471 (1999) ("*NPRM*"), in the above-captioned proceeding.

I. Introduction.

The comments contained herein address the technical, legal, and policy considerations of the FCC's proposal to adopt a new low power FM ("LPFM") service. As demonstrated herein, the proposed LPFM service will not fulfill its intended purpose of promoting diversity, fostering localism, or facilitating new entry into the broadcast business. *See, e.g., NPRM* at ¶¶11-14. Instead, the proposed LPFM service would merely exacerbate the already overly-congested conditions of the FM band. Indeed, the FCC's proposals in the *NPRM* are inconsistent with Commission proposals in another current rulemaking proceeding in which the Commission has attempted to relieve the congestion in the FM band.

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[1] Salem, through its various subsidiary entities, currently is the licensee or permittee of 48 radio stations located in communities throughout the United States. For ease of reference, the affiliated entities also will be referred to herein as "Salem."

In addition, the proposed LPFM service would have a significant adverse effect upon existing full power radio stations. LPFM stations would cause interference to existing primary and secondary FM stations, and preclude proposals to introduce new services and expand or enhance existing services. The establishment of an LPFM service also would result in an over-abundance of FM stations, particularly in smaller markets. This would result in another economic blow to independent operators of daytime-only and Class C AM stations and certain Class A FM stations, which already are struggling to survive as stand-alone entities.

For these reasons, as well as the many others discussed herein, the Commission's proposal to establish a new LPFM service should not be adopted.

II. Technical Considerations.

A. The Proposed LPFM Service Would Cause Substantial Interference to Existing FM Stations.

The Commission's proposal to establish an LPFM service fails to recognize that the vast majority of full power FM stations enjoy good-quality reception well beyond their protected service contours. Section 73.215 of the Commission's rules defines the protected contours of Class B and B1 stations as the 54 dBu and 57 dBu contours, respectively. The protected contour for all other stations is the 60 dBu contour. *See* 47 CFR §73.215. However, in the absence of interference, the minimum usable field strength is 36 dBu for satisfactory reception of a stereophonic broadcast signal.[2] Thus, it is well established that usable broadcast signals generally extend well beyond their predicted protected contours, as defined in Part 73 of the FCC's rules. If the Commission were to establish an LPFM service, LPFM stations would cause substantial interference to the signals of full

[2] *See* Engineering Statement of Carl E. Gluck (attached hereto as Appendix A), p. 1; Engineering Statement of Herman E. Hurst, Jr.(attached hereto as Appendix B), pp. 2-3.

power stations outside their protected contours. The dramatic effect that the proposed LPFM service would have on such reception is illustrated by the following examples concerning two of Salem's stations.

Among its various radio stations, Salem is the licensee of Stations KKHT(FM), Conroe, Texas, and WYLL(FM), Des Plaines, Illinois.[3] As demonstrated in the attached engineering statement of Carl E. Gluck, Stations KKHT and WYLL currently provide interference-free service to hundreds of thousands of people outside their respective protected service contours. With respect to Station KKHT, there is an area of interference-free reception of the KKHT signal in and around Nederland, Texas, which is outside KKHT's protected contour. Under the proposal set forth in the *NPRM*, a fully-spaced co-channel LP100 station could be located at Nederland.[4] Mr. Gluck conducted an analysis of the potential LP100 station at Nederland and all other sources of potential interference to determine the effect that such a station would have on KKHT's signal in the Nederland area. After finding that KKHT's 48 dBu contour encompassed the entire area where the new interference would occur, Mr. Gluck determined that 113,098 people,[5] who currently receive an interference-free signal from KKHT, no longer would be able to listen to the station due to the interfering 40 dBu contour of the LP100 station at Nederland. Moreover, of these 113,098 people, only 40,936 (approximately 36%) would receive interference-free service from the LP100 station.

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[3] Station KKHT is a Class C station operating on Channel 295. Station WYLL is a Class B station operating on Channel 294.

[4] For purposes of this analysis, it is assumed that the potential LP100 stations discussed herein would operate with 100 watts at an antenna height of 30 meters HAAT. *See* Appendix A, p. 2, n.2.

[5] All population figures contained herein are based on the 1990 U.S. Census.

Thus, 72,162 people who previously received interference-free service from KKHT in the Nederland area no longer would be able to receive service from *either* KKHT or the Nederland LP100 station. *See* Appendix A, p. 2.

Similarly, in the case of WYLL, Des Plaines, Illinois, WYLL provides interference-free service beyond its protected service contour to Portage, Indiana, and the surrounding area. Under the Commission's proposal, a fully-spaced co-channel LP100 station could operate at Portage. After considering the potential LPFM station at Portage and all other sources of potential interference, Mr. Gluck found that WYLL's 36 dBu contour encompassed most of the area where the new interference would occur.[6] Mr. Gluck determined that nearly half a million people (467,256), who currently receive interference-free service from WYLL, no longer would be able to receive the station's signal due to the interfering 34 dBu contour of the Portage LP100 station. Moreover, of these 467,256 people, only 32,057 -- *less than 7%* -- would receive interference-free service from the LP100 station based on the 60 dBu contour of the Portage LP100 station. Therefore, 435,199 people who previously received interference-free service from WYLL in the communities of Gary, Michigan City, Valparaiso, Hobart, and Merrillville, Indiana, no longer would be able to receive service from *either* WYLL or the Portage LP100 station.[7] *See* Appendix A, pp. 2-3.

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[6] The area of new interference would consist of a large area within the WYLL 36 dBu contour and Portage LP100 interfering 34 dBu contour, but excluding the area within the 80 dBu contour of Station WYBA(FM), Lansing, Illinois, which operates on Channel 292A. *See* Appendix A, p. 3 and Ex. 2.

[7] Mr. Gluck's engineering statement and the data contained therein reflect a conservative analysis of the interference that the proposed LPFM service would cause to Salem's stations. For example, in the case of WYLL, although Mr. Gluck elected to use the potential LP100 station's 34 dBu contour to determine the amount of interference that would be caused to Station WYLL, it is well established that an interfering contour 20 dBu below the desired signal will cause

(continued...)

The Commission's proposal to establish an LPFM service fails to recognize that there are many existing full power FM stations that have a substantial number of regular listeners who are located outside the station's protected service contour. If the Commission were to authorize LPFM stations in the open areas between the protected service contours of full power stations, many of the existing listeners in those areas no longer would be able to receive the signal of their favorite full power station because of the interference caused by LPFM stations.

Moreover, if the FCC were to take the position that an LPFM station would not cause interference to full power FM stations because any such "interference" would occur outside the full power stations' protected service contours, this would constitute a grave injustice to the listening public. The Commission's position would completely ignore the perspective of those listeners who reside outside the protected service contour of full power FM stations. Indeed, the average radio listener is not concerned with, and knows nothing about, "protected service contours" or other FCC technical niceties. A listener's only concern is that he or she be able to continue to receive the signal of his/her favorite station. Thus, regardless of whether the interference caused by an LPFM station occurs inside or outside the protected service contour of a listener's full power station, from the listener's perspective the interference is the same because it precludes the listener from being able to continue to receive the signal of his or her favorite station.

The interference that would be caused by LPFM stations authorized outside a full power station's protected service contour is significant for several reasons. First, the new LPFM service

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[7](...continued)
interference. Thus, Mr. Gluck could have used interfering contour values as low as 16 dBu for the potential Portage LP100 station in his analysis, which would have resulted in an even greater loss of WYLL's interference-free service.

would not constitute a satisfactory replacement for the full power service which it would destroy. As demonstrated above with respect to Stations KKHT and WYLL, the LPFM stations would serve only a very small portion of the area and population currently served by the existing full power stations, the balance of the existing service being destroyed by LPFM interference. The loss of full power service would be substantially greater than the limited gain in LPFM service. In the Nederland, Texas area, the ratio between the loss of primary full-time service to substitute, secondary replacement LPFM service would be 3 to 1; in the Portage, Indiana area, the same ratio would exceed 14 to 1.

Moreover, with respect to service losses in the Portage, Indiana area, Mr. Gluck's statement shows that under the Commission's current allotment standards no new allotments could be made in the Portage area on an interfering channel.[8] Therefore, although the residents of the Portage area reside outside WYLL's protected service contour, in the absence of an LPFM service there would be nothing to prevent those listeners from continuing to receive WYLL's signal. Although the FCC has characterized LP100 stations as constituting a secondary service, for all practical purposes, an LP100 station at Portage would effectively operate as a primary station because it would not be subject to displacement by any new allotment under the Commission's current allotment standards. Similarly, Mr. Gluck's statement shows that with respect to the losses caused by an LP100 station in the Nederland area, he has calculated those *after* allowing for the "worst case" new drop-in. *See* Appendix A, p. 2, n.3.

Furthermore, because the Commission has proposed not to require a minimum operating schedule for LP100 or microradio stations, it is likely that many interfering LPFM stations would

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[8] *See* 47 CFR §73.207; Appendix A, p. 3, n.3.

operate only on a periodic basis or for limited periods of time. This proposal would have the practical effect not only of destroying a substantial portion of a full power station's receivable signal, but it also would frustrate the listening habits of hundreds of thousands of full power station listeners by creating a great deal of uncertainty regarding their ability to receive the desired station's signal. Indeed, regular listeners of full power stations who reside outside the protected service contour of their desired station would have no way of knowing when they would be able to listen to certain programs on their full power station due to the periodic and potentially irregular schedule of an interfering LPFM station. As a result, many of these listeners may choose to no longer listen to the full power station at all, even when, unpredictably, its signal is not being destroyed by LPFM interference.

In the circumstances described above, the proposed LPFM service would violate one of the Commission's fundamental principles: the listening "public has a legitimate expectation that existing service will continue."[9] In articulating this principle, the Commission has never made any distinction between listeners who reside either inside or outside a station's protected service

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[9] *See, e.g., Amendment of the Commission's Rules Regarding Modification of FM and TV Authorizations to Specify a New Community of License,* 5 FCC Rcd 7094, 7097 (1990). In the above proceeding, the Commission stated:

> The public has a legitimate expectation that existing service will continue, and this expectation is a factor we must weigh independently against the service benefits that may result from reallotting of a channel from one community to another, regardless of whether the service removed constitutes a transmission service, *a reception service*, or both.

Id. at 7097 (emphasis added).

contour.[10] Therefore, although FCC Chairman William Kennard has repeatedly stated that he does not intend to implement the proposed LPFM service in a manner that would cause interference to existing full power stations,[11] it is unmistakably clear that he is confining his use of the term "interference" to the manner in which it is understood only by those familiar with FCC parlance and Part 73 of the Commission's rules. As demonstrated above, there can be no dispute that the proposed LPFM service would cause interference to presently usable signals of full power stations.

Thus, the American public will be deprived of FM services it now receives and enjoys if the Commission adopts rules to establish LPFM as proposed. Undoubtedly the deprivation -- loss of existing service *which would not be lost if the Commission's existing allotment standards are maintained* -- will affect tens of millions of Americans. Mr. Gluck has presented a study examining only one Class C station, KKHT, and one Class B station, WYLL, and has shown that, in combination, more than 580,000 persons who can now receive these stations will no longer be able to do so. Projected across all authorized FM stations, the total loss is stunningly large.

Across America from coast-to-coast there will be an extraordinary loss of FM service, surprising the American public -- millions of persons who had no interest in the Commission's LPFM rulemaking but, to the extent they ever read or heard of it, knew that the Chairman and some other Commissioners supporting LPFM had avowed that LPFM would not be authorized at the

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[10] *See, e.g.,* 47 CFR §74.1203 (an FM translator or booster station will not be permitted to continue to operate if it causes any actual interference to, *inter alia*, the direct reception of the off-the-air signals of any authorized broadcast station).

[11] *See, e.g., News Release, "Statement of FCC Chairman William E. Kennard at Roundtable Discussion of Low Power FM"* (May 13, 1999) (stating that the FCC must implement its proposed LPFM service "in a way that protects existing broadcast signals and does not impede the conversion to digital radio").

expense of interference to existing FM broadcast service. They will discover that "protection of existing broadcasting signals" has been qualified by the technically arcane (to most Americans) contents of 47 CFR Part 73 and the notions therein of predicted protected service contours and predicted interfering contours.[12]

Here is what the Commission should do right now to avoid this coming debacle. It should employ its databases and computer power to determine whether Mr. Gluck's analysis of only two FM stations is projectable across the universe of existing FM stations. That is: are there tens of millions of persons within the 36 dBu contours, but beyond the predicted protected contours, of FM stations, in areas where those stations' signals now suffer no interference and where no new FM allotments can be made under existing FCC allotment standards, but where LPFM signals could be introduced and cause signal loss to many, many more people than would receive a substitute LPFM signal?[13]

If the Commission learns that Mr. Gluck's analysis is not applicable only to KKHT and WYLL, but applies to hundreds or even thousands of FM stations, and if the Commission nevertheless determines to authorize an LPFM service, it would be doing so conscious of the fact that its decision could cost tens of millions of Americans the loss of FM service they now enjoy. To mitigate this loss, the rules should at least preclude LPFMs from being authorized to locations where the LPFM transmissions would destroy an interference-free signal of greater than 36 dBu field

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[12] Within Part 74, the understanding of interference held by most Americans is stated explicitly: "Interference will be considered to occur whenever reception of a regularly used signal is impaired . . . ." 47 CFR §74.1203(a)(3).

[13] In the course of this study, the Commission will learn another fact it now does not know: whether persons who would lose the reception of an existing available FM signal are in underserved areas where no more than five radio signals are available.

strength, if no FM drop-in allotment which could be made under existing standards would cause the same loss of service. If an FM drop-in under existing allotment standards could be so placed, the would-be LPFM applicant should be required to petition for the drop-in, rather than receive an LPFM grant.[14] This would assure the public that, even though there will be a loss of an existing signal, at the least those who are within the service range of the new drop-in will be served by a station with a minimum operating schedule, as well as one adhering to all of the other requirements for broadcast stations found in the Commission's rules.

B. The FCC's Proposal to Establish an LPFM Service Fails to Recognize that the FM Band Already is Overly Congested, and is Inconsistent With Commission Proposals in Its *Technical Streamlining* Rulemaking Proceeding.

In its *Technical Streamlining* rulemaking proceeding begun in 1998, just last year,[15] the FCC recognized the congested nature of the FM band. The *NPRM* in this proceeding is inconsistent with the efforts the FCC has taken in its *Technical Streamlining* proceeding to help alleviate that congestion and provide full power FM stations with greater flexibility in locating their transmitter sites in order to enhance their existing service. For example, in its *Technical Streamlining NPRM*, the Commission stated that increasing congestion in both the reserved and non-reserved portions of the FM band limit options for operating stations to relocate to better transmitter sites. *Technical Streamlining NPRM* at ¶3. The Commission also stated that "[c]ongestion in the reserved band has

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[14] This requirement will not present an equipment investment obstacle to an LPFM aspirant. The minimum power for a Class A station is 100 watts, equivalent to an LP100 and one-tenth that of an LP1000 as proposed in the *NPRM*. *See* 47 CFR §73.213(a)(i).

[15] *1998 Biennial Regulatory Review -- Streamlining of Radio Technical Rules in Parts 73 and 74 of the Commission's Rules, Notice of Proposed Rule Making* in MM Docket No. 98-93, 13 FCC Rcd 14849 (1998) ("*Technical Streamlining NPRM*"), *First Report and Order*, FCC 99-55 (released March 30, 1999) ("*Technical Streamlining First R&O*").

increased during the past twenty years, and demand for NCE FM licenses remains high." *Id.* at ¶60. The Commission's proposal in the instant proceeding to establish a new LPFM service is inconsistent with the Commission's statements in its *Technical Streamlining NPRM* in which it expressly acknowledged the congested nature of the FM band.

Moreover, certain proposals in the *Technical Streamlining NPRM* are designed to help FM stations enhance their existing service despite the congestion. For example, the FCC has proposed to allow negotiated interference agreements between stations. The Commission believes that the FM band is so congested that certain service improvements could not be implemented without the proposed new rule.[16] *Technical Streamlining NPRM* at ¶20. In addition, the FCC proposed the use of a point-to-point ("PTP") prediction model for the purpose of providing a more accurate prediction of interfering contours. *Id.* at ¶31. The Commission proposed the use of the PTP prediction model because of the congested nature of the existing FM service. This proposal reflects the Commission's desire to provide FM stations with a greater opportunity to enhance their existing service and additional flexibility in locating their transmitter sites.

The FCC also proposed to create an additional intermediate class of station -- Class C0 -- which would have maximum and minimum antenna heights of 450 meters and 300 meters above

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[16] In proposing to permit negotiated interference agreements, the Commission stated as follows:

> Virtually all major and mid-sized markets, where we anticipate the greatest level of interest in negotiated interference agreements, receive service from five or more radio stations, our traditional measure of a well-served area. [footnote omitted] Opportunities for new full service or substantial facility improvements in these markets are extremely limited. *Congestion in the FM band* provides a major technical impediment to the further "urban clustering" of stations.

Technical Streamlining NPRM at ¶18 (emphasis added).

average terrain, respectively. *Id.* at ¶43. The Commission proposed this new intermediate class of station because approximately 60% of Class C stations are not operating with maximum facilities often because Class C stations cannot obtain zoning or FAA approval for towers representing maximum facilities. The Commission believes that its current allotment scheme overprotects these facilities, and, as a result, precludes proposals to introduce new services and/or expand existing services. *See Id.* at ¶¶42-44. The Commission's proposal to create a new intermediate Class C0 station reflects another means by which the FCC would help reduce overcrowding in the FM band by providing an opportunity for new allotments within the existing FM allotment framework.

The Commission also recognized in its *Technical Streamlining* proceeding that there are stations which have been reluctant to pursue coordinated facility changes where there is a possibility that a competing application could be filed. *Id.* at ¶13. The FCC concluded that precluding the filing of competing allotment and minor change proposals in this limited context is consistent with the public interest because it would result in enhanced service to the public. *Id.* at ¶13. Accordingly, in its *First Report and Order* in the *Technical Streamlining* proceeding, the Commission adopted a new rule to permit the filing of up to four related, simultaneously-filed minor change applications. *Technical Streamlining First R&O* at ¶14.

As demonstrated above, the FCC's proposal to adopt a new LPFM service is inconsistent with proposals by the Commission in its *Technical Streamlining* rulemaking proceeding which are designed to relieve the existing congestion in the FM band, and/or permit full power stations to expand or enhance their existing service despite that congestion. Before authorizing a new LPFM service, the Commission should allow time to observe and evaluate the impact the new rules adopted in the *Technical Streamlining* proceeding have upon the existing congestion in the FM band. Indeed,

the proposed LPFM service would significantly impair the ability of full power stations to take advantage of the new rules that have been and may be adopted in that proceeding. Therefore, among its other deficiencies, the FCC's proposal to adopt a new LPFM service is premature.

C. In the Event the FCC Elects to Establish an LPFM Service, the Commission Must Maintain the Second and Third-Adjacent Channel Protection Requirements. The Proposal to Authorize an LPFM Service Without Regard to Those Protection Standards is Inconsistent With the FCC's Report and Order in *Grandfathered Short-Spaced FM Stations* and Its *Technical Streamlining NPRM*.

When the FCC initially developed the FM broadcast service, the Commission determined that stations operating within 600 kHz could not operate in the same area. At the time the current FM Table of Allotments was established in 1964, the FCC confirmed this finding and established the existing distance separation requirements for second and third-adjacent channel stations. As Mr. Hurst states in his attached engineering statement, the basic performance capabilities of audio receivers have remained essentially unchanged since the time the Commission established its distance separation provisions in 1964. *See* Appendix B, p. 3.

If the Commission were to eliminate the second and third-adjacent channel protection standards, the resulting interference would be severe in many cases. As demonstrated in Mr. Hurst's engineering statement, while maintaining the proposed intra-LPFM co-channel spacing requirement of 24 km, it would be possible to assign as many as *26 LP100 stations* on an adjacent channel within the 54 dBu contour of a Class B station. *See* Appendix B, pp. 4-5. Therefore, in the event the Commission elects to adopt an LPFM service, the Commission must maintain the existing second and third-adjacent channel separation requirements.

The FCC's proposal to establish an LPFM service without regard to second and third-adjacent channel protection is inconsistent with its Report and Order in *Grandfathered Short-Spaced*

FM Stations[17] and its *Technical Streamlining NPRM*. In *Grandfathered Short-Spaced FM Stations*, the Commission eliminated the second and third-adjacent channel distance separation requirements only for "grandfathered" short-spaced stations (*i.e.*, those stations at locations authorized prior to November 16, 1964, that do not meet the distance separation requirements of subsequently adopted Section 73.207 of the Commission's rules, and have remained continuously short-spaced since that time).[18] The Commission expressly stated: "We have no intention of relaxing second-adjacent channel and third-adjacent channel spacing requirements as allotment and application criteria."[19] The Commission's refusal to eliminate the second and third-adjacent channel protection requirements in *Grandfathered Short-Spaced FM Stations* establishes that the Commission still regards these channels as posing a real interference threat.

In its *NPRM* in this proceeding, the Commission noted that it eliminated the third-adjacent channel protection for full power grandfathered short-spaced stations, including stations which operate with substantially more power than LP1000 stations. *NPRM* at ¶43. Inexplicably, however, the Commission made no mention of the fact that in the same proceeding it refused to eliminate the second and third-adjacent channel separation requirements for all other commercial FM stations. The Commission's reference to its elimination of the second and third-adjacent channel protection

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[17] *See Report and Order* in MM Docket No. 96-120, *Grandfathered Short-Spaced FM Stations*, 12 FCC Rcd 11840 (1997).

[18] *Grandfathered Short-Spaced FM Stations*, 12 FCC Rcd at 11841, n.2.

[19] 12 FCC Rcd at 11848, ¶25, citing *Notice of Proposed Rulemaking*, 11 FCC Rcd 7245 (1996). The FCC made the same statement in the concluding paragraph of that section of its Report and Order. 12 FCC Rcd at 11849, ¶29.

standards for grandfathered short-spaced stations -- without stating that it refused to eliminate such requirements for all other commercial FM stations -- is inherently misleading.

Moreover, in its *Technical Streamlining NPRM*, the FCC proposed to revise the Section 73.215(e) spacing table to provide all commercial FM stations with a minimum of six kilometers of relief from the Section 73.207(a) spacing requirements.[20] The Commission stated that this would "significantly increase licensees' flexibility to identify sites that provide sufficient spacing to second- and third-adjacent channel stations." *Technical Streamlining NPRM* at ¶37. Nevertheless, consistent with its statements in *Grandfathered Short-Spaced FM Stations*, the Commission maintained the second and third-adjacent channel protection requirements as allotment and application criteria under Section 73.207. Thus, the FCC's proposal in its *Technical Streamlining* proceeding demonstrates that, as recently as June 1998,[21] the Commission intended to maintain the second and third-adjacent channel distance separation requirements for FM stations.

In the same proceeding, the FCC also proposed to eliminate the inconsistency between commercial and noncommercial station interference protection standards, which further demonstrates its concern regarding second and third-adjacent channel interference. Specifically, the Commission

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[20] In proposing to revise Section 73.215(e) of its rules, the Commission noted that for second and third-adjacent channel stations, the contour protection rule generally limits the amount of relief from the Section 73.207 spacing requirements to no more than three kilometers, and, in some cases, provides no relief at all. As a result, stations with second and third-adjacent channel spacing problems have, in many instances, less flexibility to relocate their facilities than they had under the former Section 73.207 waiver policies that permitted spacing waivers up to six kilometers. *See Technical Streamlining NPRM* at ¶¶36-37.

[21] The FCC's *Technical Streamlining NPRM* was released on June 15, 1998. *See* 13 FCC Rcd 14849 (1998).

proposed to modify Sections 73.509 and 74.1204(a) of its rules to specify a 100 dBu interfering contour for second-adjacent channel NCE and FM translator stations:

> Based on our experience in the commercial FM band, we believe that this preclusive standard better identifies areas of potentially degraded or lost service within a station's protected service area caused by another station operating on a *second adjacent channel*. We also believe it would afford certain FM educational and translator stations an opportunity to increase power and service, and provide flexibility to relocate facilities.[22]

The FCC's effort to eliminate the inconsistency between commercial and noncommercial service, specifically with respect to second-adjacent channel interference, demonstrates the Commission's recognition that second-adjacent interference still exists.

As demonstrated above, in both *Grandfathered Short-Spaced FM Stations* and its *Technical Streamlining NPRM*, the Commission made clear that it would retain the second and third-adjacent channel protection requirements. Although the Commission has proposed to authorize an LPFM service without regard to second and third-adjacent channel distance separation requirements, the only explanation the Commission offered for the change in its position is the following:

> Relaxed interference standards for low power FM stations may be the only way to "find" sufficient spectrum in medium and larger markets to create any new viable service of 100 watts or more.

NPRM at ¶44. Even assuming, *arguendo*, that eliminating second and third-adjacent channel protection requirements is the only way to "find" sufficient spectrum for LPFM stations in certain markets, that does not constitute a sufficient basis for eliminating these interference protection standards. As demonstrated above, the Commission's proposal to eliminate these interference protection requirements is inconsistent with its decision to retain the second and third-adjacent

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[22] *Technical Streamlining NPRM* at ¶56 (emphasis added).

channel protection requirements in two recent rulemaking proceedings. Moreover, the Commission offered no evidence whatsoever to suggest that the potential for second and third-adjacent interference is any less with respect to its proposed LPFM service than it was at the time it issued its *Report and Order* in *Grandfathered Short-Spaced FM Stations* and its *Technical Streamlining NPRM.* Indeed, rather than proffer any evidence to suggest that its proposed LPFM service would not pose a threat of second and third-adjacent channel interference, the Commission merely requested comment on "the original rationale for 2nd- and 3rd-adjacent channel protection and the extent to which circumstances have changed in such a way to support relaxation of these protections." *NPRM* at ¶46, n.65. The only circumstance that has changed since the issuance of *Grandfathered Short-Spaced FM Stations* and its *Technical Streamlining NPRM* is that the Commission has not been able to "find" sufficient spectrum for its proposed LPFM service. If the Commission elects to eliminate the second and third-adjacent channel protection requirements with respect to LPFM stations, it must set forth a factual basis sufficient to (i) explain its inconsistent application of the second and third-adjacent channel protection requirements in its recent rulemaking proceedings; and (ii) demonstrate that establishing an LPFM service and eliminating the second and third-adjacent channel protection requirements would not cause interference to full power FM stations. Indeed, as the Commission is well aware, a radio receiver is not capable of distinguishing between a signal broadcast by a full power station and one broadcast by an LPFM station. The physical properties of each signal are identical. Therefore, it would be arbitrary and capricious for the Commission to eliminate the second and/or third-adjacent channel separation requirements for LPFM stations, but maintain those same protection standards for full power stations.

In the *NPRM*, the Commission indicated, however, that due to the relatively low power levels contemplated for LPFM stations, it is inclined to eliminate the third-adjacent channel protection standards, believing that the effects of such interference may "well be insignificant." *NPRM* at ¶¶43-45. It can be argued that, if the third-adjacent channel separation requirements were eliminated, the resulting interference within the protected service contours of full power stations would be relatively insignificant in comparison to the full power station's total service area. However, this argument lacks merit in cases where the full power station's signal strength is relatively low, but still exceeds the protected service contour value. Indeed, as demonstrated in Mr. Hurst's attached engineering statement, if an LP1000 station were to be assigned just inside the 60 dBu service contour of a 6 kW Class A FM station, the LP1000 station would cause interference to more than 2% of the full power station's protected service area.[23] *See* Appendix B, p. 4.

Nevertheless, in the event the FCC insists upon eliminating the third-adjacent protection standards in establishing an LPFM service, in order to minimize the potential interference to full power stations, the Commission should establish the following distance separation requirements for both LP1000 and LP100 stations:[24]

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[23] This interference figure does not include, of course, any interference that the LP1000 station would cause to the Class A FM station outside its predicted protected service contour.

[24] *See* Appendix B, p. 5.

For LP1000 and LP100 Stations, the LPFM Transmitter Site Must Be Located:		
LPFM is 3rd-Adjacent to Station Class	Beyond (Distance to Protected Contour) (km)	Or Within (Distance to 20 mV/m 86 dBu Contour) (km)
A	28.3	6.5
B1	44.7	9.2
B	65.1	13.3
C3	39.1	9.2
C2	52.2	13.3
C1	72.4	22.5
C	91.8	32.3

D. In the Event the FCC Elects to Establish an LPFM Service, LPFM Stations Should be Authorized to Operate Only With a Horizontally Polarized Transmitting Antenna.

The FCC's technical standards governing the permitted power of full power stations is based on horizontal polarization. Although the Commission's rules provide that a station may add vertical polarization or utilize a circularly polarized waveform, the vertical components must not exceed the root mean square value of the horizontally polarized signal.[25]

The proposed LPFM assignment criteria assume the use of a non-directional antenna. No provision has been made for the use of a directional antenna with respect to providing protection to full power stations. As the Commission is well aware, an antenna with vertical polarization is subject to pattern distortion depending on the manner in which the antenna is mounted on the supporting structure. As demonstrated in Mr. Hurst's attached engineering statement and accompanying exhibits, the variation in the horizontal polarization pattern of a non-directional

[25] *See* 47 CFR §§73.316; 73.310(a).

circularly polarized antenna is ± 1 dB or less. The vertically polarized component, however, varies between 4.7 dB and 5.6 dB.[26] This variation is significant because, as Mr. Hurst states, it could result in substantial interference to full power stations, even though an LPFM station is assigned at a distance that complies with the proposed separation criteria based on the use of a non-directional antenna. *Id.* at 6. Therefore, in the event the FCC adopts an LPFM service, the Commission should restrict the proposed LPFM stations to operating only with horizontal polarization in order to minimize potential interference to full power stations.

E. In the Event the FCC Elects to Establish an LPFM Service, the Commission Should Impose Maximum Height and Power Restrictions, and Increase the Minimum Distance Separation Requirements For All LPFM Stations.

In its *NPRM*, the Commission proposed to permit LP1000 stations to operate with up to 1000 watts at an antenna height of 60 meters above average terrain. The Commission stated, however, that antenna heights greater than 60 meters above average terrain would be permitted, so long as the station made an appropriate downward adjustment in its effective radiated power ("ERP") such that its predicted 1 mV/m signal contour radius would not exceed 14.2 kilometers. *NPRM* at ¶23, note 35. Similar treatment was proposed for LP100 stations. *NPRM* at ¶30, note 44.

In the event the FCC elects to establish a new LPFM service, the Commission must adopt maximum antenna height restrictions for each class of LPFM station. In the FM service, it is well established that the greater a station's antenna height, the greater distance the station's signal generally will extend because it will be less affected by intervening terrain. Thus, operating an LP1000 station with an antenna height greater than 60 meters above average terrain with an equivalent reduction in operating power (such that its predicted 1 mV/m signal contour will not

[26] *See* Appendix B, p. 6 and exhibits thereto.

exceed 14.2 kilometers) conceivably would enable the LP1000 station to extend its actual (rather than predicted) service and interfering contours well beyond what they would be if the station were operating with kW at 60 meters HAAT.

LPFM stations are likely to have a greater adverse impact upon the signals of full power stations operating in the same area if the LPFMs operate with antennas at heights significantly higher than 60 meters (or 30 meters for LP100 stations) above average terrain. Therefore, to the extent all three classes of LPFM stations are established, the Commission should impose maximum height restrictions of 120 meters HAAT for all LP1000 stations, and 60 meters HAAT for all LP100 and microradio stations, as calculated pursuant to Section 73.313 of the FCC's rules. *See* Appendix B, p. 7.

Moreover, the FCC's existing distance separation requirements are based, *inter alia*, on uniform terrain. However, because there are substantial variations in terrain throughout the country, the proposed separations should be increased by 20% to provide a margin of safety for full power stations, whose usable signals (as demonstrated above) extend well beyond their predicted protected service contours. *See* Appendix B, p. 7. In addition, the power assigned to an LPFM station should be selected to ensure that the appropriate interfering contour does not extend in any direction beyond the distances calculated based on the referenced facilities (*i.e.*, for LP1000 stations, 1 kW at 60 meters HAAT; for LP100 stations, 100 watts at 30 meters HAAT), plus a tolerance factor of 20%. With today's computer technology, the calculation required above can be made on one-degree intervals, and an appropriate power can be selected to ensure that an LPFM station's interfering contour is within the required separation, expanded to include the 20% safety margin. *Id.*

Furthermore, there is a strong likelihood that, due to their restricted maximum power and height combinations, and resulting limited coverage areas in surroundings of average terrain, many LPFM stations will attempt to locate their transmitter sites on elevated terrain, such as the side of a mountain or hill. This would enable these LPFM stations to achieve greatly extended signal reach in those directions from which a mountainside site creates a very favorable height above terrain, significantly greater than the HAAT of the LPFM station as calculated pursuant to Section 73.313. In the sample calculation provided in Section 73.313(d)(4), the HAAT is determined to be 85 meters, but on the 45° radial it is 255 meters. Therefore, as an alternative to the proposal set forth above, and in order to further minimize interference to full power stations operating in proximity to an LPFM station, the Commission should adopt a rule prohibiting any LPFM station from operating with a power and an antenna height above the average terrain of any individual radial greater than the standard height and power combination for the LPFM class when all radials are considered, if to do so would cause the LPFM station to extend its predicted interfering contour in the direction of that radial such that it would overlap with the predicted protected contour of any co-channel, first-adjacent, second-adjacent, or third-adjacent full power station.[27] *Id.* at 6.

F. The FCC Should Limit the Amount of Interference that LPFM Stations May Receive.

Assuming, *arguendo*, the FCC elects to authorize an LPFM service, the Commission should establish strict guidelines governing the amount of interference that LPFM stations can receive. Due

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[27] For example, if, using the illustration in Section 73.313(d)(4)(i) of the rules, the signal of an LPFM station on the 45° radial, on which the height above average terrain is 255 meters, reaches so far that the LPFM station's interfering contour falls inside the predicted protected contour of a full power FM station, the LPFM applicant must amend its application by reducing power below the level calculated at a HAAT of 85 meters to a level where there is no overlap of its interfering contour with the protected contour of the full power station.

to their limited coverage areas, LPFM stations are likely to have small listening audiences and garner little advertising or underwriting revenue. As a result, it will be difficult for any LPFM station to air local programming that serves the needs and interests of its respective community. Moreover, LPFM stations would exacerbate the conditions of an already overly-congested FM band, preclude proposals to introduce new services, and significantly impair the ability of full power stations to either enhance or expand their existing services. In addition, LPFM stations would cause significant interference to full power FM stations both within and outside their protected contour. The proposed LPFM service also poses a significant threat to the development and implementation of in-band-on-channel ("IBOC") digital transmission services. Therefore, in light of the highly speculative potential benefits of an LPFM service, and the substantial public interest concerns, including damage to the well-established FM service now enjoyed in America, which weigh heavily against establishing an LPFM service, the Commission should not authorize any LPFM or microradio station if it is predicted to receive more than a *de minimis* amount of interference, *i.e.*, more than 5% of its predicted service area. To tolerate high levels of received interference, or ignore it altogether in the LPFM authorization process, would simply contribute to deterioration of FM broadcast reception quality without any certain, or highly likely, offsetting benefits.

G. The Establishment of an LPFM Service Would Significantly Hinder the Development of IBOC Digital Transmission Services.

In its *NPRM*, the Commission expressly acknowledged that its "understanding of future IBOC systems is preliminary," and that it does not have a complete understanding of the negative impact or restrictions that the authorization of an LPFM service would have on the transition to digital IBOC technology for FM stations. *NPRM* at ¶49. The Commission further stated: "Clearly,

we need to better understand the potential impact of second-adjacent channel LPFM protection standards on the successful development of an IBOC system." *Id.* Accordingly, in proposing to permit negotiated interference agreements between FM stations in its *Technical Streamlining NPRM*, the Commission specifically sought comments addressing how its proposal might affect the development and implementation of IBOC digital radio systems. *Technical Streamlining NPRM* at ¶27.

As demonstrated in both this proceeding and the *Technical Streamlining NPRM*, before the FCC adopts new rules and establishes an LPFM service, the Commission must first gain more knowledge concerning IBOC digital conversion in order to determine the extent to which the proposed new LPFM service is likely to hamper or impair the development and implementation of the new digital transmission technology. This is true with respect to all three classes of the proposed LPFM service. Furthermore, due to the FCC's admitted lack of knowledge concerning an IBOC system, it is imperative that the Commission impose second and third-adjacent channel protection requirements on all LPFM stations in order to ensure adequate protection for the future development of IBOC digital conversion.

III. Legal Considerations.

A. The FCC's Proposal to Adopt Strict Local, National, and Cross-Ownership Restrictions is Inconsistent With the Telecommunications Act of 1996.

In its *NPRM*, the Commission "tentatively" concluded that the ownership limits set forth in the Telecommunications Act of 1996 ("1996 Act") do "not apply to a service that did not exist in 1996."[28] *NPRM* at ¶59. Accordingly, the Commission proposed to adopt strict local, national, and

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[28] Section 202(a) of the 1996 Act eliminated all restrictions on the number of radio (continued...)

cross-ownership restrictions for the LPFM service which would prohibit, *inter alia*, a party holding an attributable interest in a full power broadcast station from holding any interest in an LPFM station. *Id.* at ¶¶57, 59. The Commission also proposed to (i) prohibit any individual or entity from owning more than one LPFM station in the same community (*id.*), and (ii) on a national basis, proposed to permit parties to own no more than five or ten LPFM stations (*id.* at ¶60).

In the event the FCC elects to establish an LPFM service, the proposed ownership restrictions should not be adopted because they are inconsistent with the 1996 Act. The sole basis for the Commission's tentative conclusion that the 1996 Act does not apply -- because the LPFM service did not exist in 1996 -- does not constitute a sufficient legal basis for refusing to apply the ownership limits set forth in the 1996 Act. Indeed, following the FCC's reasoning, there is nothing to prevent the Commission from creating certain new classes of full power stations and applying stricter ownership constraints to those stations than the restrictions contained in the 1996 Act, merely on the basis that these new classes of stations also did not exist in 1996. For example, Section 73.211 of the Commission's rules provides that the minimum ERP for Class A FM stations is 0.1 kw.[29] 47 CFR §73.211(a)(i). Thus, because the Commission has proposed to permit LP1000 stations to operate with up to 1000 watts (*NPRM* at ¶23), the Commission conceivably could re-classify those Class A FM stations operating with 1000 watts or less at antenna heights of no greater than 60 meters above average terrain as LP1000 stations, and thereby subject them to the stricter

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[28](...continued)
stations that could be owned nationally. Section 202(b) of the 1996 Act significantly relaxed the Commission's local radio ownership rules (*e.g.*, permitting an entity to own up to eight radio stations in the largest markets). *See* 47 CFR §73.3555(a).

[29] There is no minimum height requirement for Class A stations. 47 CFR §73.211(a)(2).